Appendix E-b Archeological Resources Technical Report

Appendices

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Archaeological Resources Technical Report for the City of Santa Ana General Plan Update, Orange County, California

MAY 2020

PREPARED FOR

PlaceWorks

PREPARED BY

SWCA Environmental Consultants

ARCHAEOLOGICAL RESOURCES TECHNICAL REPORT FOR THE CITY OF SANTA ANA GENERAL PLAN UPDATE, ORANGE COUNTY, CALIFORNIA

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EXECUTIVE SUMMARY

Purpose and Scope: In support of the forthcoming City of Santa Ana General Plan Update, PlaceWorks retained SWCA Environmental Consultants (SWCA) to summarize the existing conditions of archaeological resources within the General Plan area, and to provide mitigation measures for potential impacts. The General Plan area includes the entirety of the City of Santa Ana, totaling approximately 17,472 acres (27.3 square miles [70.7 km^2]). Methods include background research, an archaeological resources records search, and a literature review.

Dates of Investigation: SWCA conducted a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center, located at the California State University, Fullerton, on February 19, 2019. SWCA also requested a Sacred Lands File Search from the California Native American Heritage Commission (NAHC) on February 22, 2019, and received the results on March 1, 2019.

Summary of Findings: The CHRIS records search indicates that eight previously-recorded archaeological resources were identified within the General Plan area: four of which are prehistoric, three are historic and one is a multi-component resource. Of these resources, two—CA-ORA-300 and CA-ORA-353—contain, and are on the vicinity of, known prehistoric burials. The vicinity surrounding these resources should be considered highly sensitive. Coordination with the NAHC also indicates that there are tribal cultural resources within the General Plan area. A review of historic and ethnographic maps indicates that there is a moderate likelihood for encountering intact subsurface prehistoric and historic archaeological resources. While almost the entirety of the General Plan area has been extensively developed, redevelopment within the City may expose previously unknown resources. With planning and the implementation of the proposed cultural resources mitigation measures, impacts to archaeological resources can be reduced to less than significant.

Mitigation Measures CUL-1 through CUL-4 (below) were developed to reduce potential individual and cumulative impacts associated with future development and redevelopment. Mitigation Measure CUL-1 requires an archaeological resources assessment be conducted for future development projects to identify any known archaeological resources and sensitivity of the site. Mitigation Measures CUL-2 through CUL-4 detail the next steps required should the archaeological resources assessment identify known resources or determine the site to have high or moderate resource sensitivity. Upon compliance with Mitigation Measures CUL-1 through CUL-4, individual and cumulative impacts to archaeological resources would be reduced to less than significant levels.

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INTRODUCTION

In support of the forthcoming City of Santa Ana General Plan Update, PlaceWorks retained SWCA Environmental Consultants (SWCA) to summarize the existing conditions of cultural resources within all unincorporated lands that are subject to the City of Santa Ana land use jurisdiction. The General Plan area occupies the entirety of the City of Santa Ana (City), Orange County, California. Methods include background research, a cultural resources records search and literature review, and Sacred Lands File search. Cultural Resources Project Manager and Archaeologist Alyssa Newcomb, M.S., Registered Professional Archaeologist (RPA), managed the study, conducted file searches, and coauthored this report. SWCA Archaeologists Amber Johnson, B.A., also contributed to the study and report. SWCA Geographic Information Systems (GIS) Specialist John Walls created the maps for the report, and SWCA Technical Editor Ruthe Smith, M.S., edited and formatted the document. SWCA Cultural Resources Program Director Heather Gibson, Ph.D., RPA, provided quality assurance/quality control.

Project Description

The proposed project is a comprehensive update to the City of Santa Ana's General Plan (1982). The City's General Plan was last updated in 1982, with some updates to the City's Land Use Element, Circulation Element, Urban Design Element, and Economic Development in 1998. In March of 2014, the City Council adopted the Santa Ana Strategic Plan, identifying the need for a comprehensive update to the City's Existing General Plan. The General Plan is the City's principal policy and planning document guiding the development, conservation, and enhancement of Santa Ana. It contains a comprehensive collection of goals and policies related to the physical development of the City, and the General Plan Update is intended to result in a total of 11 elements to guide the physical development, quality of life, economic health, and sustainability of the Santa Ana community.

The City identified five areas suited for new growth and development: South Main Street, Grand Avenue/17th Street, West Santa Ana Boulevard, 55 Freeway/Dyer Road, and South Bristol Street. These five areas are located along major travel corridors, the future OC Streetcar line, and/or linked to the Downtown. In general, many areas currently designated for General Commercial and Professional Office are expanding opportunities for residential development through a proposed change to the Urban Neighborhood or District Center General Plan land use designations. Industrial Flex would be introduced where Industrial land use designations currently exist within each of the five focus areas in order to allow for cleaner industrial and commercial uses with live-work opportunities.

Project Location

The City of Santa Ana is located in the southwest portion of California, bordered by Anaheim to the north, Garden Grove to the west, Huntington Beach and Newport Beach to the southwest, and Irvine to the southeast (Figure 1). As shown in Table 1, the City is plotted in numerous Townships, Ranges, and Sections, as depicted on the U.S. Geological Survey (USGS) Anaheim, Orange, Newport Beach, and Tustin 7.5 minute quadrangles (Figure 2). Encompassing approximately 27.3 square miles (70.7 km^2), Santa Ana is the County Seat and second largest city in Orange County, and eleventh largest in California (Figure 3). The Santa Ana River runs northeast-southwest through the western side of the city. Interstate 5 (I-5), a major north-south route through California, passes through the northern portion of Santa Ana. Another major interstate, Interstate 405 (I-405), is located just south of the City's limits and serves as a major north-south connector between Greater Los Angeles, Orange County, and San Diego County.

Table 1. Locational Information

Quadrangle (7.5')	Township	Range	Sections
Anaheim, CA	T5S	R10W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 25, 26, 27, 28, 33, 34, 35, 36,
Anaheim, CA	T4S	R10W	25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
Orange, CA	T4S	R9W	5, 6, 7, 8, 27, 28, 29, 30, 31, 32, 33, 34
Orange, CA	T5S	R9W	3, 4, 5, 6, 7, 8, 9, 10
Newport Beach, CA	T5S	R10W	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 32, 33, 34, 35, 36
Newport Beach, CA	T6S	R10W	1, 2, 3, 4, 5,
Tustin, CA	T5S	R9W	15, 16, 17, 18, 19, 20, 21, 22, 28, 29 30, 31, 32, 33
Tustin, CA	T6S	R9W	4, 5, 627

Figure 1. General Plan area.

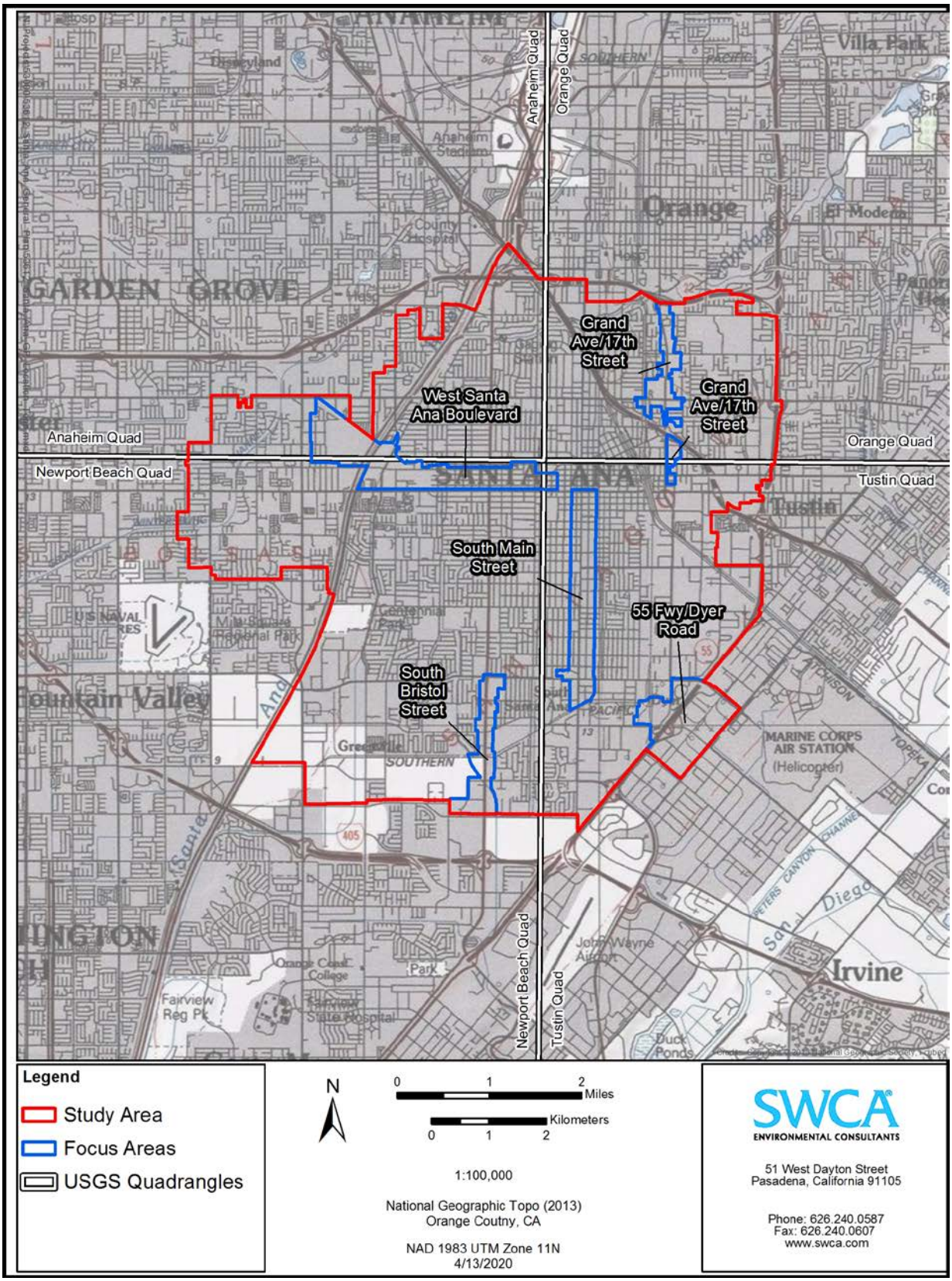

Figure 2. Location of General Plan area.

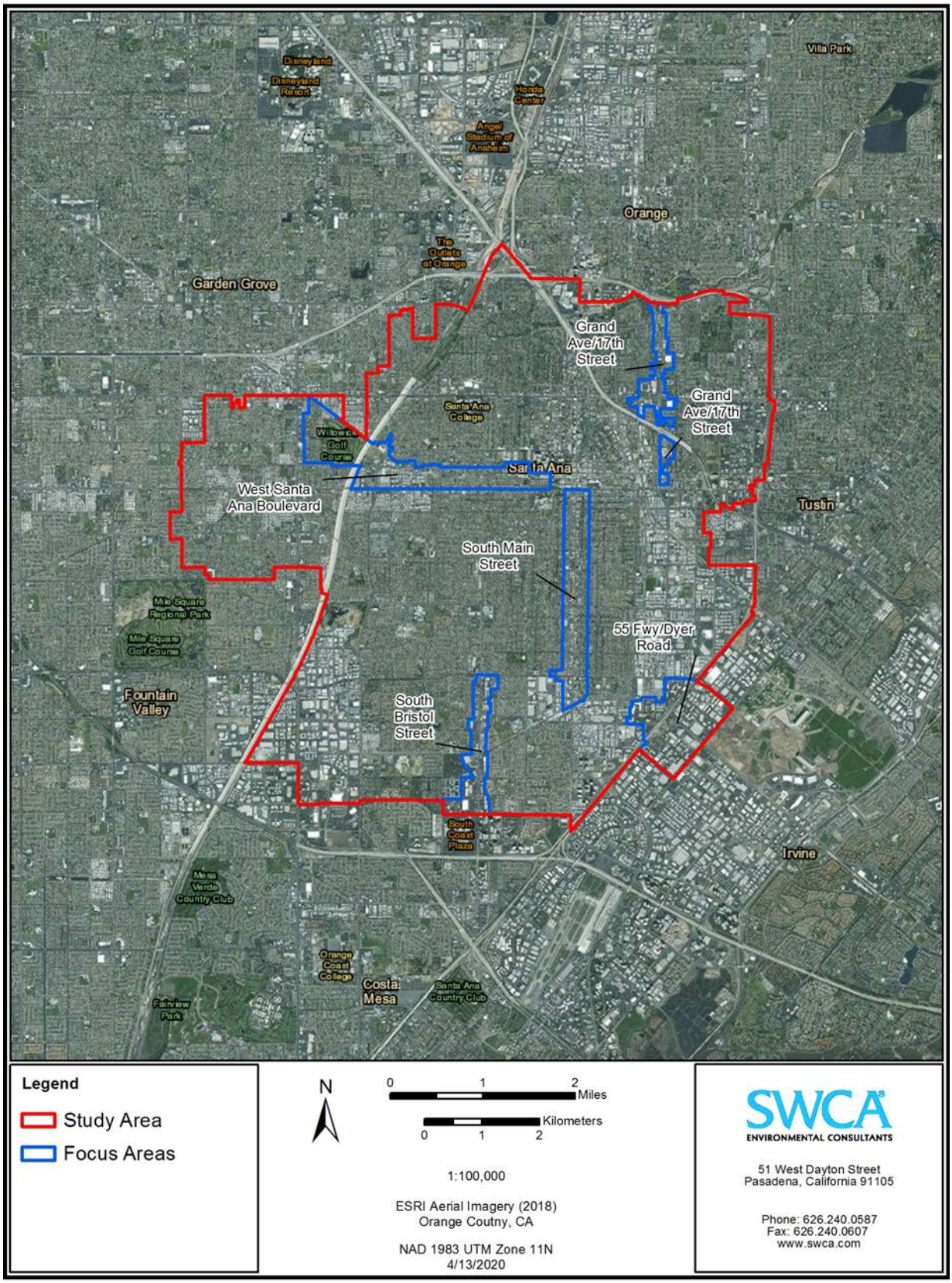

Figure 3. Overview of General Plan area.

REGULATORY SETTING

A complex network of federal, state, and local regulations governs the cultural resources of California. This section is intended as an overview of these regulations rather than an in-depth review. This section reviews the federal, state, and local regulations and policies that may be pertinent to the update of the City's General Plan.

Federal Regulations

National Historic Preservation Act of 1966

Enacted in 1966 and amended most recently in 2014, the National Historic Preservation Act (NHPA; 54 United States Code [USC] 300101 et seq.) instituted a multifaceted program, administered by the Secretary of the Interior, to encourage sound preservation policies of the nation's cultural resources at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP), established the position of State Historic Preservation Officer, and provided for the designation of State Review Boards. The NHPA also set up a mechanism to certify local governments to carry out the goals of the NHPA, assisted Native American tribes to preserve their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP).

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places was established by the NHPA of 1966 as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 Code of Federal Regulations [CFR] part 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Significance

A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- **Criterion A:** It is associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion B:** It is associated with the lives of persons who are significant in our past;
- **Criterion C:** It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or
- **Criterion D:** It has yielded, or may be likely to yield, information important in prehistory or history. Ordinarily cemeteries, birthplaces, or graves of historic figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, and properties that are primarily commemorative in nature, are not considered eligible for listing in the NRHP, unless they satisfy certain conditions. In general, a resource must be 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

Integrity

In addition to meeting these criteria, a property must retain historic integrity, which is defined in National Register Bulletin 15 as the "ability of a property to convey its significance" (National Park Service 1990). In order to assess integrity, the National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, which are defined in the following manner in National Register Bulletin 15:

- **Location:** the place where the historic property was constructed or the place where the historic event occurred;
- **Design:** the combination of elements that create the form, plan, space, structure, and style of a property;
- **Setting:** the physical environment of a historic property;
- **Materials:** the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
- **Workmanship:** the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
- **Feeling:** a property's expression of the aesthetic or historic sense of a particular period of time; and/or
- **Association:** the direct link between an important historic event or person and a historic property.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (25 USC 3001 et seq.) protects human remains, funerary objects, sacred objects, and items of cultural patrimony of indigenous peoples on federal lands. NAGPRA stipulates priorities for assigning ownership or control of such cultural items excavated or discovered on federal or tribal lands, or in the possession and control of an agency that has received federal funding.

NAGPRA also provides for the repatriation of human remains and associated items previously collected from federal lands and in the possession or control of a federal agency or federally funded repository. Implementing regulations are codified in 43 CFR Part 10. In addition to defining procedures for dealing with previously collected human remains and associated items, these regulations outline procedures for negotiating plans of action or comprehensive agreements for treatment of human remains and associated items encountered in intentional excavations, or inadvertent discoveries on federal or tribal lands.

National Historic Landmarks Program

The National Historic Landmarks Program was established to preserve, protect, and maintain U.S. National Historic Landmarks (NHLs). The NHL Program is "a list of nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage" (National Park Service [NPS] 2018) of the U.S. The difference between the NHL Program and the NRHP is that the NHL Program contains properties that are important to the entire nation, rather than properties that can be important to local, state, or federal levels.

Antiquities Act of 1906

The Antiquities Act of 1906 (PL 59-209; 34 Statute 225; 16 USC 431-433) was the first federal law to provide protection of historic and prehistoric resources located on federal land. This act prohibits any excavation on public land without permission of the appropriate department secretary. The Antiquities Act authorizes the Secretaries of the Interior, Agriculture, and Army to grant permission to reputable institutions to conduct research (including excavation) to increase knowledge and the permanent preservation of antiquities in public museums. This act authorizes the President to declare areas of federal lands as national monuments. Preservation of American Antiquities (43 CFR Part 3) implements the Antiquities Act, defining jurisdiction over cultural resources on federal land and the permit process for excavations.

State Regulations

The California Office of Historic Preservation (OHP), a division of the California Department of Parks and Recreation, is responsible for carrying out the duties described in the California Public Resources Code (PRC) and maintaining the California Historic Resources Inventory and California Register of Historical Resources (CRHR). The state-level regulatory framework also includes the California Environmental Quality Act (CEQA), which requires the identification and mitigation of substantial adverse impacts that may affect the significance of eligible historical and archaeological resources.

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Sections 21083.2 and 21084.1). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys, or designated by local landmarks programs may be nominated for inclusion in the CRHR. According to PRC Section 5024.1(c), a resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- **Criterion 1:** It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2:** It is associated with the lives of persons important in our past.
- **Criterion 3:** It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- **Criterion 4:** It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity does not meet NRHP criteria may still be eligible for listing in the CRHR.

California Environmental Quality Act

CEQA requires a lead agency to analyze whether historic and/or archaeological resources may be adversely affected by a proposed project. Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (PRC Section 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether the proposed project involves cultural resources. Second, if cultural resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource.

HISTORICAL RESOURCES

According to State CEQA Guidelines Section 15064.5, for the purposes of CEQA, historical resources are:

- A resource listed in, or formally determined eligible…for listing in the California Register of Historical Resources (PRC 5024.1, Title 14 California Code of Regulations [CCR], Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historic resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code.
- Any object, building, structure, site, area, place, record, or manuscript that the lead agency determines to be eligible for national, state, or local landmark listing; generally, a resource shall be considered by the lead agency to be historically significant (and therefore a historic resource under CEQA) if the resource meets the criteria for listing on the California Register (as defined in PRC Section 5024.1, Title 14 CCR, Section 4852).

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity (as defined above) does not meet NRHP criteria may still be eligible for listing in the CRHR.

According to CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude the lead agency from determining that the resource may be a historical resource (PRC Section 5024.1). Pursuant to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (State CEQA Guidelines, Section 15064.5[b]).

Substantial Adverse Change and Indirect Impacts to Historical Resources

State CEQA Guidelines specify that a "substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (State CEQA Guidelines, Section 15064.5). Material impairment occurs when a project alters in an adverse manner or demolishes "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" or eligibility for inclusion in the NRHP, CRHR, or local register. In addition, pursuant to State CEQA Guidelines Section 15126.2, the "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

The following guides and requirements are of particular relevance to this study's analysis of indirect impacts to historic resources. Pursuant to State CEQA Guidelines (Section 15378), study of a project

under CEQA requires consideration of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." State CEQA Guidelines (Section 15064[d]) further define direct and indirect impacts:

1. A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project.
2. An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.
3. An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

ARCHAEOLOGICAL RESOURCES

In terms of archaeological resources, PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a proposed project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a], [b], and [c]). CEQA notes if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on those resources shall not be considered to be a significant effect on the environment (State CEQA Guidelines Section 15064.5[c][4]).

CALIFORNIA STATE SENATE BILL 18

Signed into law in 2004, Senate Bill (SB) 18 requires that cities and counties notify and consult with California Native American tribes about proposed local land use planning decisions for the purpose of protecting traditional tribal cultural sites. Cities and counties must provide general and specific plan amendment proposals to California Native American tribes that the California Native American Heritage Commission (NAHC) has identified as having traditional lands located within the city's boundaries. If requested by the Native American tribes, the city must also conduct consultations with the tribes prior to adopting or amending their general and specific plans.

CALIFORNIA STATE ASSEMBLY BILL 52

Assembly Bill 52 of 2014 (AB 52) amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

Consultation with Native Americans

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Tribal Cultural Resources

Section 4 of AB 52 adds Sections 21074(a) and (b) to the PRC, which address tribal cultural resources and cultural landscapes. Section 21074(a) defines tribal cultural resources as one of the following:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
   B. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1(a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

Treatment of Human Remains

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under California Health and Safety Code (CHSC) Section 7050.5. More specifically, remains suspected to be Native American are treated under CEQA at CCR Section 15064.5; PRC Section 5097.98 illustrates the process to be followed in the event that remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the County Coroner must be notified (CCR 15064.5 and PRC 5097.98).

CALIFORNIA PUBLIC RESOURCE CODE SECTION 5097.98

The General Plan is subject to California PRC Section 5097.98, which states that if a county coroner notifies the NAHC that human remains are Native American and outside the coroner's jurisdiction per CHSC Section 7050.5, the NAHC must determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific

removal and nondestructive analysis of human remains and items associated with Native American burials.

CALIFORNIA HEALTH AND SAFETY CODE SECTION 7050.5

This code section requires that further excavation or disturbance of land, upon discovery of human remains outside of a dedicated cemetery, cease until a county coroner makes a report. It requires a county coroner to contact the NAHC within 24 hours if the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American.

HISTORIC PRESERVATION

The Santa Ana Historic Resources Commission was established to recognize and preserve historic structures important to the heritage of the City. The Program promotes the identification, evaluation, rehabilitation, adaptive use, and restoration of historic structures. In 1998, the City adopted Chapter 30 of the Santa Ana Municipal Code to establish the "Santa Ana Register of Historical Properties," and created a Historic Resources Commission to oversee Santa Ana's Historic Preservation Program. The City of Santa Ana has two National Register Districts: Downtown Santa Ana and French Park. Any improvements or alterations to a property on the Santa Ana Register of Historic Properties, as well as those contributing properties located in a historic district, must meet the Secretary of Interior Standards for Rehabilitation and will require a Certificate of Appropriateness. Major alterations, relocations or demolitions are considered for approval by the Historic Resources Commission.

ENVIRONMENTAL SETTING

The City of Santa Ana covers a total surface area of 27.3 square miles (70.7 km^2) and has an elevation of between 83 feet (25.3 m) and 150 feet (45.7 m) above mean sea level. It consists of mixed residential and light commercial developments, with little to no open space areas containing native vegetation and animal communities. The City is located on a sprawling floodplain, and is bounded on all sides by development, including the cities of Garden Grove, Orange, Irvine, and Costa Mesa. Transecting the City of Santa Ana running northeast to southwest is the Santa Ana River, a 96-mile long river located entirely within California, originating in the San Bernardino Mountains and draining into the Pacific Ocean in Orange County. The Santa Ana Mountains are located approximately ten miles (15.3 km) to the east. The Santa Ana Mountains are a disconnected, 61-mile (98.2-km) western segment of the California Peninsular Ranges, extending southeastward from the Whittier Fault in the Los Angeles Basin to the Santa Margarita River. The Peninsular Ranges represent the northernmost extent of mountains making up the Baja California peninsula. Sierra Peak marks the northernmost summit of the Santa Ana Mountains, reaching an elevation of 3,045 feet (928 m). Saddleback Ridge, made up of Modjeska Peak at 5,496 feet (1,675 m) and Santiago Peak at 5,689 feet (1,734 m), is the highest summit in the range.

Prior to the development of the area, the native vegetation of the area was characterized by valley grasslands, coastal sage scrub, chaparral, and southern coast woodland communities. The drought-adapted coastal sage scrub habitats of Southern California were dominated by California sagebrush (*Artemisia californica*) and buckwheat (*Eriogonum fasciculatum*), coast brittle-brush (*Encelia californica*), monkeyflower (*Mimulus* spp.), poison oak (*Toxicodendron diversiloba*) and true sages such as black (*Salvia mellifera*) and purple sages (*Salvia leucophylla*). Further upland, where lower chaparral communities predominate, chamise (*Adenostoma fasciculatum*) and California lilacs (*Ceanothus* spp.) flourished, particularly on south-facing slopes, while California scrub oak (*Quercus berberidifolia*), holly-leaf redberry (*Rhamnus ilicifolia*), and holly-leaf cherry (*Prunus ilicifolia*) were common on north-facing slopes. These communities provided habitat for a wide range of animal species, with reptiles representing one of most conspicuous resident groups. Among them were the side-blotched (*Uta stansburiana*) and western fence lizards (*Sceloporus occidentalis*), as well as the California mountain kingsnake (*Lampropeltis zonata*) and the long-nosed snake (*Chionactis occipitalis*). Birds native to the region include the western scrub jay (*Aphelocoma californica*), California quail (*Callipepla californica*), and the great-horned owl (*Bubo virginianus*). The coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), ringtail (*Bassariscus astutus*), and pinyon mouse (*Peromyscus truei*) make up some of the most abundant mammal species from the region (Schoenherr 1992).

CULTURAL SETTING

Prehistoric Overview

Numerous chronological sequences have been devised to understand cultural changes for various areas within southern California over the past century. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is still widely used today and is applicable to coastal and many inland areas. Four periods are presented in Wallace's prehistoric sequence: Early Man, Milling Stone, Intermediate, and Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) will be referred to in the following discussion. This synthesis is supported by a larger archaeological database for

southern California, which includes the advent and increased use of radiocarbon dating after the 1950s. Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlate with Wallace's Early Man, Milling Stone, and Intermediate. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Late Prehistoric period. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

Some revisions have been made to Wallace's 1955 synthesis using radiocarbon dates and projectile point assemblages (e.g., Koerper and Drover 1983; Mason and Peterson 1994; Koerper et al. 2002). The summary of prehistoric chronological sequences for southern California coastal and near-coastal areas presented below is a composite of information in Wallace (1955) and Warren (1968), as well as more recent studies, including Koerper and Drover (1983). The chronology formulated by Koerper and Drover (1983) is based on the results of their excavations at a multi-component village site (CA-ORA-119-A) near the University of California, Irvine in Orange County. Diagnostic artifacts, particularly projectile points, and other cultural material produced evidence at CA-ORA-119-A from the late Milling Stone, Intermediate, Late Prehistoric, and early Historic periods.

Early Man Period/San Dieguito/Paleo-Coastal (ca. 10,000–6000 B.C.)

When Wallace defined the Early Man period in the mid-1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous older sites dating prior to 10,000 years ago, including ones on the coast and Channel Islands (e.g., Erlandson 1991; Rick et al. 2001:609; Johnson et al. 2002; Moratto 1984). The earliest accepted dates for occupation are from two of the northern Channel Islands, located off the coast from Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002).

In what is now Orange County, there are sites dating from 9,000–10,000 years ago (Macko 1998a:41; Mason and Peterson 1994:55-57; Sawyer 2006). Known sites dating to the Early Man period are rare in western Riverside County. One exception is the Elsinore site (CA-RIV-2798-B) that has deposits dating as early as 6630 cal B.C. (Grenda 1997:260).

Recent data from coastal, as well as inland, sites during this period indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lakeshores in eastern San Diego County (see Moratto 1984:90-92). A Paleo-Coastal Tradition was proposed and recently referenced to highlight the distinctive marine and littoral focus identified within the southern California coastal archaeological record prior to the emergence of the Encinitas Tradition during the succeeding Milling Stone period (Mason and Peterson 1994:57-58; Moratto 1984:104). At coastal sites, there is abundant evidence that marine resources such as fish, marine mammals, and shellfish were exploited during the Paleo-Coastal period.

At near-coastal and inland sites, it appears that an emphasis on hunting may have been greater during the Early Man period than in later periods, although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987; Dillon 2002). In Riverside County, only one isolated fluted point has been identified on the surface of a site in the Pinto Basin in the central part of the county (Dillon 2002:113). Common elements in many San Dieguito Tradition sites include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points (e.g., Silver Lake and Lake Mojave series), scrapers, engraving tools, and crescents (Warren 1967:174-177; Warren and True 1961:251-254). Use of the atlatl (spear-throwing stick) during this period facilitated launching spears with

greater power and distance. Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3,000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Milling Stone Period (ca. 6000–3000/1000 B.C.)

The Milling Stone period of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Milling Stone period sites are common in the southern California coastal region between Santa Barbara and San Diego, and at many inland locations including the Prado Basin in western Riverside County and the Pauma Valley in northeastern San Diego County (e.g., True 1958; Herring 1968; Langenwalter and Brock 1985; Sawyer and Brock 1999; Sutton 1993). Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling Stone period and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara-Ventura County region beginning around 3000 B.C.

Of the numerous Milling Stone period sites identified in the region, the most well-known is the Irvine site (CA-ORA-64), which has occupation levels dating between circa 6000–4000 B.C. (Drover et al. 1983; Macko 1998b). Along coastal Orange County, Koerper and Drover (1983:11) mark the transition at the end of the Milling Stone around 1000 B.C., while Wallace's mid-1950s scheme has the period ending at 3000 B.C. Based on radiocarbon dates from the Newport Coast Archaeological Project (NCAP) project, Mason and Peterson (1994) propose a timeline for the Milling Stone similar to that advanced by Koerper and Drover. The chronological schemes advanced for coastal Orange County also apply to many southern California near-coastal and inland areas, including much of western Riverside County.

During the Milling Stone period and Encinitas Tradition, stone chopping, scraping, and cutting tools were abundant, and generally made from locally available raw material. Projectile points, which are rather large and generally leaf-shaped, and bone tools such as awls were generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare as well. Evidence of weaving or basketry is present at a few sites. Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stone sites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling Stone period, but are not common.

Two types of artifacts that are considered diagnostic of the Milling Stone period are the cogged stone and discoidal, most of which have been found within sites dating between 4000–1000 B.C. (Moratto 1984:149). The cogged stone is a ground stone object that has gear-like teeth on the perimeter and is produced from a variety of materials. The function of cogged stones is unknown, but they have been attributed ritualistic or ceremonial uses by several scholars (Eberhart 1961:367; Dixon 1968:64-65). Similar to cogged stones, discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Cogged stones and discoidals were often purposefully buried or "cached." They are

most common in sites along the coastal drainages from southern Ventura County southward and are particularly abundant at some Orange County sites, although a few specimens have been found inland at Cajon Pass (Dixon 1968:63; Moratto 1984:149). Discoidals and cogged stones have been found together at some Orange County sites, such as CA-ORA-83/86/144 (Van Bueren et al. 1989:772), CA-ORA-950 (Ron Bissell, personal communication 1999), and Los Cerritos Ranch (Dixon 1975 in Moratto 1984:150).

Koerper and Drover (1983) suggest that Milling Stone period sites reflect migratory settlement patterns of hunters and gatherers who used marine resources during the winter and inland resources the remainder of the year. More recent research indicates that residential bases or camps were moved to resources in a seasonal round (de Barros 1996; Mason et al. 1997; Koerper et al. 2002), or that some sites were occupied year-round with portions of the village population leaving at certain times of the year to exploit available resources (Cottrell and Del Chario 1981). Regardless of settlement system, it is clear that subsistence strategies during the Milling Stone period included hunting small and large terrestrial mammals, marine mammals, and birds; collecting shellfish and other shore species; extensive use of seed and plant products; the processing of yucca and agave; and near-shore fishing with barbs or gorges (Reinman 1964; Kowta 1969). As evidenced by the abundant milling equipment found at these sites throughout the region, the processing of small seeds was an important component of their subsistence practices.

Characteristic mortuary practices during the Milling Stone period or Encinitas Tradition include extended and loosely flexed burials interred beneath cobble or milling stone cairns. Some burials contain red ochre and few grave goods, such as shell beads and milling stones. “Killed” milling stones, exhibiting holes, may occur in the cairns. Secondary burials are common in the Los Angeles County area, while flexed burials oriented along a north-south axis are common in Orange and San Diego Counties. Evidence of wattle-and-daub structures and walls have been identified at some sites in the San Joaquin Hills and Newport Coast area spanning all cultural periods (Mason et al. 1991, 1992, 1993; Koerper 1995; Strudwick 2004; Sawyer 2006).

A potentially unique trait of the Milling Stone period, isolated to a small region of coastal Orange County, is the presence of a rudimentary ceramic industry involving the creation of fired clay effigies, figurines, and small crude thick-walled pottery vessels (Drover 1971, 1975; Drover et al. 1983; Macko 1998b; Sawyer and Koerper 2006). The figurines have been found at the Irvine site (CA-ORA-64) on Newport Bay, and a collapsed rockshelter site (CA-ORA-1405-B) within Muddy Canyon.

Intermediate Period (ca. 3000/1000 B.C.–A.D. 500/650)

Wallace’s Intermediate period and Warren’s Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angeles Counties date from approximately 3000 B.C. to A.D. 500 (Wallace 1955; Warren 1968). This era is characterized by a shift toward a hunting and maritime subsistence strategy along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers’ (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; Rogers 1939, 1945) persist with little change during this time.

In Orange County, researchers have estimated that the Intermediate period began around 1000 B.C. and lasted until circa A.D. 650 (3000–1300 B.P.) (Koerper and Drover 1983:11; Mason and Peterson 1994). A more recent evaluation, based on some 1,300 calibrated radiocarbon dates from sites in Orange County, suggests a date of 1400 B.C. for the start of the Intermediate, marked by single-piece circular fishhooks and coinciding with the transition from the Middle to Late Holocene (Koerper et al. 2002:67–68). Another researcher sees the Intermediate not as a cultural period, but as a transition between the Milling Stone and the later Late Prehistoric period, based on his investigations at sites in the Bonita Mesa area near upper Newport Bay (Peterson 2000). This idea may simply reflect subregional or area-specific trends

at sites in and around Newport Bay rather than a more general depiction of the cultural period dynamics in Orange County and the greater southern California region.

During the Intermediate period, there was a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and marine mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks became part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common in deposits dating to this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Koerper and Drover (1983) consider Gypsum Cave and Elko series points, which have a wide distribution in the Great Basin and Mojave deserts between circa 2000 B.C. and A.D. 500, to be diagnostic of this period. Bone tools, including awls, were more numerous than in the preceding period, and the use of asphaltum adhesive was common as well.

Mortars and pestles became more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to have entered the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate period include fully flexed burials placed face down or face up and oriented toward the north or west (Warren 1968:2–3). Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occur beneath cairns or broken artifacts. Shell, bone and stone ornaments, including charmstones, were more common than in the preceding Encinitas Tradition. Some later sites include olive shell (*Olivella* spp.) and steatite beads, mortars with flat bases and flaring sides, and a few small points. The broad distribution of steatite from the Channel Islands and obsidian from distant inland regions, among other items, attest to the growth of trade, particularly during the later part of this period.

Late Prehistoric Period (ca. A.D. 500/650–A.D. 1769)

Wallace (1955, 1978) places the beginning of the Late Prehistoric period around A.D. 500. In Orange County, the start of this period is recognized at a slightly later date, circa A.D. 650 (Koerper and Drover 1983; Mason and Peterson 1994). In all chronological schemes for southern California, the Late Prehistoric period lasts until European contact occurred in A.D. 1769.

During the Late Prehistoric period, there was an increase in the use of plant food resources in addition to an increase in land and marine mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during this period, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. In Orange County, Cottonwood series triangular projectile points in particular are diagnostic of this period (Koerper and Drover 1983). Other items include steatite cooking vessels and containers, the increased presence of smaller bone and shell circular fishhooks, perforated stones, arrow shaft straighteners made of steatite, a variety of bone tools, and personal ornaments made from shell, bone, and stone. There is also an increased use of asphaltum for waterproofing and as an adhesive.

Late Prehistoric period sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole Venus clam (*Chione* spp.) and drilled abalone. Steatite effigies become more common, with scallop (*Pecten* spp. and *Argopecten* spp.) shell rattles common in middens. In Orange County for example, scallop shell rattles are concentrated in the Late Prehistoric midden at CA-ORA-119A, and other time sensitive artifacts including abalone ornaments and drilled Venus clam shells are present (Koerper and Drover 1983:19-20). Much of the rock art found today in the Chumash sphere is thought to date to this period (Whitley 2000:41). Mortuary customs were elaborate, including cremation and interment, with abundant grave goods.

By A.D. 1000, fired clay smoking pipes and ceramic vessels began to appear at some sites (Meighan 1954; Warren 1984). The scarcity of pottery in coastal and near-coastal sites implies ceramic technology was not well developed in that area, or that ceramics were obtained by trade with neighboring groups to the south and east. The lack of widespread pottery manufacture is usually attributed to the high quality of tightly woven and watertight basketry that functioned in the same capacity as ceramic vessels.

Another feature typical of Late Prehistoric period occupation is an increase in the frequency of obsidian imported from the Obsidian Butte source in Imperial County. Obsidian Butte was exploited after circa A.D. 1000 after its exposure by the receding waters of Holocene Lake Cahuilla (Wilke 1978). A Late Prehistoric period component of the Elsinore site (CA-RIV-2798-A) produced two flakes that originated from Obsidian Butte (Grenda 1997:255). Although about 16 percent of the debitage at the Peppertree site (CA-RIV-463) at Perris Reservoir is obsidian, no sourcing study was done (Wilke 1974:61). The site contains a late Intermediate to Late Prehistoric period component and it is assumed that most of the obsidian originated from Obsidian Butte. In the earlier Milling Stone and Intermediate periods, most of the obsidian found at sites within Orange County and many inland areas came from northern sources, primarily the Coso volcanic field. This also appears to be the case within Prado Basin and other interior areas that have yielded obsidian (e.g., Grenda 1995:59; Taşkiran 1997:46). The presence of Grimes Canyon (Ventura County) fused shale at southern California archaeological sites is also thought to be typical of the Late Prehistoric period (Demcak 1981; Hall 1988).

During this period, there was an increase in population size accompanied by the advent of larger, more permanent villages (Wallace 1955:223). Large populations and, in places, high population densities, are characteristic, with some coastal and near-coastal settlements containing as many as 1,500 people. Many of the larger settlements were permanent villages where people resided year-round. The populations of these villages may have also increased seasonally.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles, Orange, and western Riverside Counties region; and the Yuman Tradition in the San Diego region. The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are considered to be the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles, Orange, and western Riverside Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are thought to have resulted from Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or "Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric

and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered to be the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

Ethnographic Overview

Ethnographic boundaries in this part of southern California are loosely defined because of the highly mobile nature of desert and mountain settlement strategies and the variety of alternatives presented by previous researchers. According to available ethnographic maps (Bean and Smith 1978:570; Kroeber 1925; Sutton et al. 2007:232), the City of Santa Ana falls within the traditional territory of the Gabrielino.

Gabrielino

The General Plan Area lies within an area historically occupied by the Gabrielino (Bean and Smith 1978:538; Kroeber 1925:Plate 57). The name Gabrielino (sometimes spelled Gabrieleno or Gabrieleño) denotes those people who were administered by the Spanish from Mission San Gabriel. By the same token, Native Americans in the sphere of influence of Mission San Fernando were historically referred to as Fernandeño (Kroeber 1925). This group is now considered to be a regional dialect of the Gabrielino language, along with the Santa Catalina Island and San Nicolas Island dialects (Bean and Smith 1978). In the post-Contact period, Mission San Gabriel included natives of the greater Los Angeles area, as well as members of surrounding groups such as Kitanemuk, Serrano, and Cahuilla. There is little evidence that the people we call Gabrielino had a broad term for their group; rather, they identified themselves as an inhabitant of a specific community through the use of locational suffixes (e.g., a resident of Yaanga was called a Yabit, much the same way that a resident of New York is called a New Yorker) (Dakin 1978:222).

Native words that have been suggested as labels for the broader group of Native Americans in the Los Angeles region include Tongva (or Tong-v) and Kizh (Kij or Kichereno); although there is evidence that these terms originally referred to local places or smaller groups of people within the larger group that we now call Gabrielino (Heizer 1968). The term Gabrielino, which combines the most commonly used group names, is used in the remainder of this study to designate native people of the Los Angeles Basin and their descendants.

Gabrielino lands encompassed the greater Los Angeles Basin and three Channel Islands: San Clemente, San Nicolas, and Santa Catalina. Their mainland territory was bounded on the north by the Chumash at Topanga Creek, the Serrano at the San Gabriel Mountains in the east, and the Juaneño on the south at Aliso Creek (Bean and Smith 1978:538; Kroeber 1925:636).

The Gabrielino language, as well as that of the neighboring Juaneño/Luiseño, Tatataviam/Alliklik, and Serrano, belongs to the Takic branch of the Uto-Aztecan language family, which can be traced to the Great Basin area (Mithun 2004). This language family's origin differs substantially from that of the Chumash to the north and the Ipai, Tipai, and Kumeyaay farther south. The language of the Ipai, Tipai, and Kumeyaay is derived from the California-Delta branch of the Yuman-Cochimi language family, which originated in the American Southwest (Mithun 2004:577). The Chumash language is unlike both the Yuman-Cochimi and Uto-Aztecan families, and may represent a separate lineage (Mithun 2004:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan- and Yuman-speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood. The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King

2004). Lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47).

Gabrielino society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The chief, or tómyaar, always came from the primary lineage of the clan/village. One or two clans generally made up the population of a village. Even though the Gabrielino did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class consisted of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village.

The Gabrielino established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests that a number approaching 10,000 seems more likely (O'Neil 2002). Several Gabrielino villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event (McCawley 1996:113–114).

Houses constructed by the Gabrielino could hold up to 50 people and were large, circular, domed structures made of willow poles thatched with tule (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games such as lacrosse and pole throwing were created adjacent to Gabrielino villages (McCawley 1996:27).

The Gabrielino subsistence economy was centered on gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, and deserts as well as riparian, estuarine, and open and rocky coastal eco-niches. As with most native Californians, acorns were the staple food (an established industry by the time of the early Intermediate period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., cactus, yucca, sages, and agave). Fresh and saltwater fish, shellfish, birds, reptiles, and insects as well as large and small mammals were also consumed (Bean and Smith 1978:546; Kroeber 1925:631–632; McCawley 1996:119–123, 128–131).

A wide variety of tools and implements was employed by the Gabrielino to gather and collect food resources. These included the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a ti'at) and tule balsa canoes for fishing, travel, and trade between the mainland and the Channel Islands. The ocean-going canoes were capable of holding six to 14 people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing (Blackburn 1963; McCawley 1996:117-127).

Gabrielino people processed food with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammer stones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large, finely woven baskets, and the unprocessed acorns were stored in large

granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack after repeated firings. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners (Blackburn 1963; Kroeber 1925:631-639; McCawley 1996:129-138).

The Gabrielino participated in an extensive exchange network, trading coastal goods for inland resources. They exported Santa Catalina Island steatite products, roots, seal and otter skins, fish and shellfish, red ochre, and lead ore to neighboring tribes, as well as people as far away as the Colorado River. In exchange they received ceramic goods, deer skin shirts, obsidian, acorns, and other items. This burgeoning trade was facilitated by the use of craft specialists, a standard medium of exchange (Olivella bead currency), and the regular destruction of valuables in ceremonies that maintained a high demand for these goods (McCawley 1996:112-115).

At the time of Spanish contact, the basis of Gabrielino religious life was the Chinigchinich cult, which centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven, where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637–638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived. It was spreading south into the Southern Takic groups even as Christian missions were being built, and may represent a mixture of native and Christian belief and practices (McCawley 1996:143–144).

Deceased Gabrielino were either buried or cremated, with inhumation reportedly being more common on the Channel Islands and the neighboring mainland coast, and cremation predominating on the remainder of the coast and in the interior (Harrington 1942; McCawley 1996:157). Remains were buried in distinct burial areas, either associated with villages (Altschul et al. 2007:34-42) or without apparent village association (Applied Earthworks 1999; Frazier 2000:169-176). Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966), as well as scattered among broken ground stone implements (Altschul et al. 2007; Cleland et al. 2007). Archaeological data such as these correspond with ethnographic descriptions of an elaborate mourning ceremony that included a wide variety of offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives (Boscana 1846:314). Offerings varied with the sex and status of the deceased (Dakin 1978:234-235; Johnston 1962:52-54; McCawley 1996:155-165). At the behest of the Spanish missionaries, cremation essentially ceased during the post-Contact period (McCawley 1996:157). For inhumations, the deceased was wrapped in a covering, bound head to foot, with hands crooked upon their breast (Dakin 1978:234). Archaeological examples of human remains in the Gabrielino region dating to the Late Prehistoric and protohistoric periods are dominated by flexed or extended inhumations, with a smaller number of cremations. Grave goods associated with burials/cremations varied in quantity and content and included projectile points, beads, steatite objects, and asphaltum (Frazier 2000:175). Well-preserved burial features have evidence of wrappings of net, hide blanket or cape, or a mat of tule reeds or sea grass (McCawley 1996:157). At least one formal grave marker, an elaborately etched sandstone slab, was reported in 1885 at a site between Los Angeles and the coast, near San Pedro (Blackburn 1963:35).

A review of a number of historic and ethnographic maps was conducted to further identify the archaeological sensitivity of the City of Santa Ana General Plan area. An ethnographic map showing Native American settlements used for the recruitment of neophytes to the San Fernando and San Gabriel Missions based on King (2004:21) shows the General Plan area including the village of Pajebet (Figure 4). A review of the Kirkman (1937) pictorial and historical map of Orange County does not depict any Native American villages within the General Plan area, but a village is noted both to the northeast and southwest along the Santa Ana River (Figure 5) The Santa Ana River was known as Wanaawna by the

Gabrielino, and the settlement of Pasbengna was recorded as being along the Santa Ana River in the vicinity of the City of Santa Ana (McCawley 1996:60; see also Taylor 1864). It is likely that the village of Pajebet from the King (2004) map was in actuality Pasbengna, and Pasbengna is the unnamed village marked to the north of the General Plan area on the Kirkman (1937) map. The village mapped to the south of the General Plan area may be the village of Lukúpa, meaning "silvery," which was situated on a knoll in the region over the Santa Ana River floodplain (McCawley 1996:71). Lukúpa is believed to be the Newland House Site (CA-ORA-183), which was excavated in the 1930s. The Camino (Nuevo) Real is also mapped by Kirkman (1937) as transecting the General Plan area, and the town of "Oranga" is mapped at the northern border.

Figure 4. General Plan area plotted on King's (2004:21) map showing the approximate location of Native American villages using names listed in Mission-period registers.

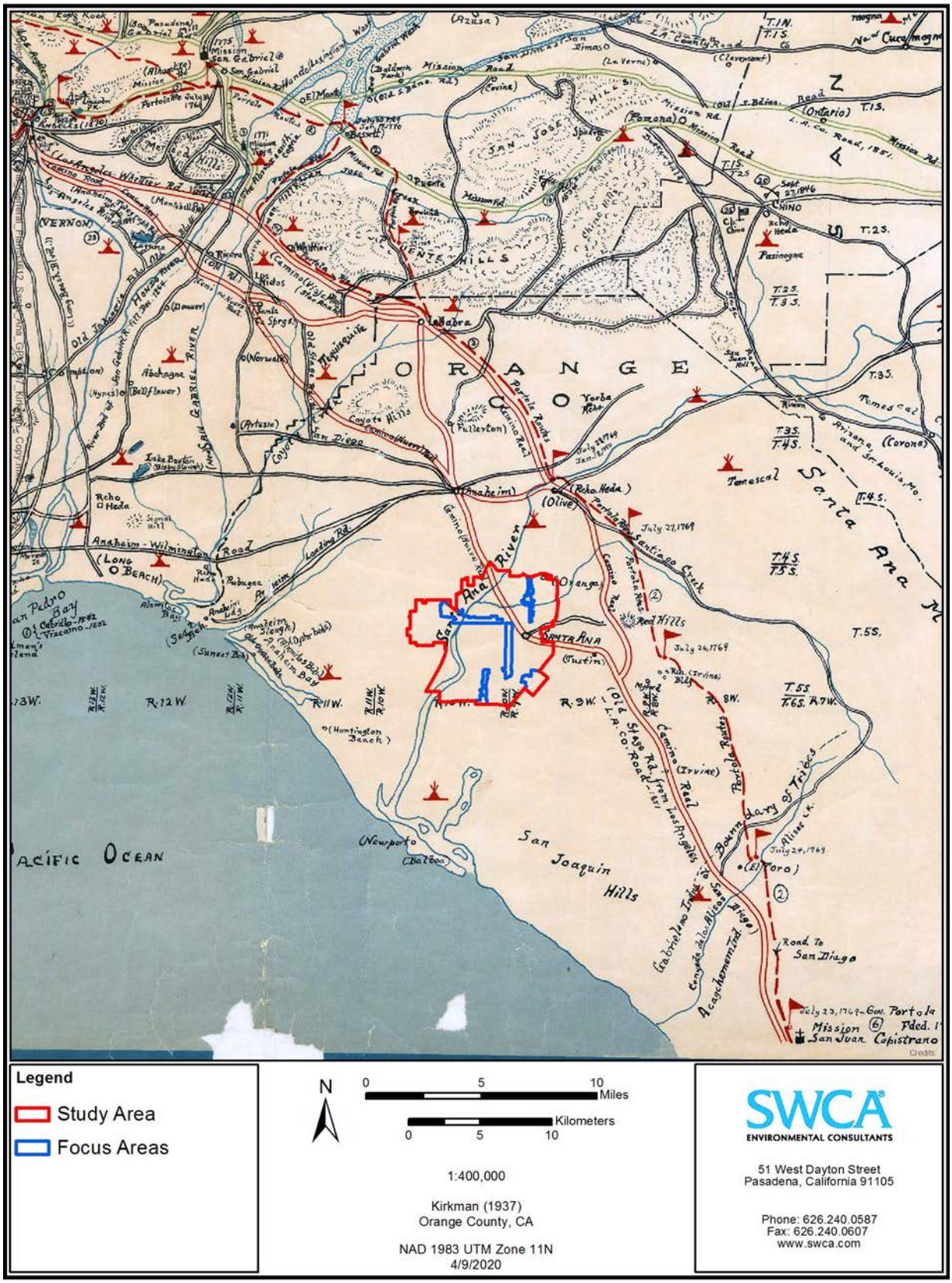

Figure 5. General Plan area plotted on the Kirkman's (1937) pictorial and historical map of Orange County.

Historic Overview

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769–1822)

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríquez Cabríllo stopped in 1542 at present-day San Diego Bay. With his crew, Cabríllo explored the shorelines of present Catalina Island as well as San Pedro and Santa Monica Bays. Much of the present California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885:96–99; Gumprecht 1999:35).

More than 200 years passed before Spain began the colonization and inland exploration of Alta California. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's Historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July of 1769, while Portolá was exploring southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1833.

The Portolá expedition first reached the present-day boundaries of Orange County in July 1769, thereby becoming the first Europeans to visit the area (Smith 1965). They named the area *El Valle de Santa Ana* or "The Valley of Santa Ana." Six years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, which was dedicated the following year. The Mission San Juan Capistrano became Orange County's first permanent Euro-American settlement, becoming fully operational by 1776.

Mexican Period (1822–1848)

A major emphasis during the Spanish Period in California was the construction of missions and associated presidios to integrate the Native American population into Christianity and communal enterprise. Incentives were also provided to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish Period, only two of which were successful and remain as California cities (San José and Los Angeles). Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955:14).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. Nine ranchos were granted between 1837 and 1846 in the future Orange County (Middlebrook 2005). Among the first ranchos deeded within the future Orange County were Manuel Nieto's Rancho Las Bolsas (partially in future Los Angeles County), granted by Spanish Governor Pedro Fages in 1784, and the Rancho Santiago de Santa Ana, granted by Governor José Joaquín Arrillaga to José Antonio Yorba and Juan Pablo Peralta in 1810 (Hallan-Gibson 1986). The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

American Period (1848–Present)

War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident Californios and Americans in the San Bernardino area. The Mexican-American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. Territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through 1850s. The Gold Rush commenced in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides, but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains where available. The cattle boom ended for southern California as neighbor states and territories drove herds to northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 2005:102–103).

Many of the ranchos in the area now known as Orange County remained intact after the U.S. took possession of California; however, a severe drought in the 1860s resulted in many of the ranchos being sold. Many of the lands in this area were consolidated into extensive properties owned by Richard O'Neil, Sr., James Irvine, and others. Silver was discovered in the Santa Ana Mountains in 1887. This drew additional settlers to the region, which was already experiencing a real estate boom based on quality agricultural land (Dumke 1944).

The first towns laid out in the Santa Ana Valley, Anaheim (1857), Santa Ana (1870), and Orange (1870), all experienced rapid growth during the boom years of the late 1880s. Land promoters, or "boomers," moved into the area publicizing new settlements with stories of the bountifulness and beauty of the state. The well-watered Downey Plain of the immediate region was widely advertised as excellent for farming. New towns also appeared along new segments of the Atchison, Topeka & Santa Fe Railroad and the Southern Pacific Railroad (SPRR) (Dumke 1944). On March 11, 1889, the County of Orange was created, occupying 780 square miles (2020 km^2) of former Los Angeles County lands. Euro-American land use patterns differed considerably from those of the Mexicans and Spaniards. Their farms and dairies focused on intensive exploitation of the land, contrasting sharply with the passive exploitation characteristic of the

ranchos. Within a decade the county was occupied by several populous American agricultural communities. The hills continued to be used for ranching, although orchards and vineyards were also planted on their slopes.

The population of Orange County grew throughout the twentieth century, yet the county retained its agricultural character. Anaheim, Fullerton and La Habra started as agricultural shipping centers surrounded by cultivated fields. The post-World War II era brought a new wave of growth, transforming most of the fields into suburban housing tracts. Several large freeway construction projects connected Orange County with the rest of the state including the Santa Ana Freeway (I-5), which passed through Anaheim in the 1956, and the Riverside Freeway (State Highway 91), which passed through Fullerton in 1963. Orange County became increasingly residential and by the 1980s was developed with numerous master planned communities, such as Irvine, including most of south county. Today the county is identified with amusement parks, including Disneyland and Knott's Berry Farm, as well as its 40 miles (64.4 km) of beaches. Despite weathering a bankruptcy in the 1990s, Orange County remains a desirable and upscale place to live with a mild Mediterranean climate.

History of the City of Santa Ana

The valley where Santa Ana is located was explored by Spaniard Franciscan Gaspar de Portolá in 1769. The area and adjacent river was named Santa Ana in honor of Saint Anne. In 1801, Juan Pablo Grijalva acquired a land grant to develop for cattle grazing and agriculture, which he named Rancho Santiago de Santa Ana. The Santa Ana River created an ideal place for more ranching, and the area grew into an agricultural center, eventually extending from the foothills of the Santa Ana mountains to the ocean (Encyclopedia Britannica 2019) In 1869, William H. Spurgeon purchased land from the Grijalva family and presented a formal town plan**,** keeping Santa Ana as the town name. Spurgeon worked out deals with Southern Pacific Railroad to extend their line to Santa Ana, offering $10,000 and 90 acres of land on the eastern side of the town. This in turn allowed farm produce to be transported up towards Los Angeles. The line was constructed mostly by Chinese laborers, and service from Santa Ana began in December of 1877 (Brigandi 2019). Pacific Electric extended their southern interurban rail line into Santa Ana in 1904. Their "Red Cars" could be seen entering the West Santa Ana Branch at Fourth Street and Santa Ana Boulevard. After World War II, passenger service declined as people returned to their automobiles (Copeland 1997). Service discontinued to Santa Ana and was pushed back to Bellflower in 1950, and in 1958 the entire route was finally suspended.

Historic maps depict the General Plan area within the Rancho Santa Ana and Rancho Las Bolsas Land Grants (Figure 6-Figure 7). The Rancho Santa Ana Land Grant is located on the eastern side of the Santa Ana River, and is made up of several different parcels of varying acreages. The largest parcel is noted as belonging to James McFadden, totaling 4,576 acres (1851.8 ha). The City of Santa Ana boundary incorporates approximately three quarters of the parcel, and covers the southern portion of the General Plan area. The next largest parcel at 2,455 acres (993.5 ha) is located entirely within the City boundary, and is noted as belonging to F.W. Koll. The Koll parcel, along with a 1,865 acre (754.7 ha) parcel belonging to Asencion Sepulveda de Mott, makes up the center portion of the General Plan area. The northern portion of the General Plan area is made up of 25 smaller parcels ranging in size from 649 acres (262.6 ha) to 25 acres (10.1 ha). The Rancho Santa Ana Land Grant maps do indict some structures and features of note. Within Township 5 South, Range 10 West, Section 24 of the F.W. Koll parcel, two houses, "House of Johnson" and "House of F. Koll," are mapped south of the "Road to San Joaquin" and to the north of an unnamed spring. The "House of Coyote Sepulveda" is mapped within Township 5 South, Range 10 West, Section 23 of the Asencion Sepulveda de Mott parcel, and the "House of Jóse Sepulveda" is mapped within Section 14 southeast of an unnamed spring. Within Township 5 South, Range 10 West, Section 11 of the Julian Chaves parcel, the house of Julian Chaves is mapped adjacent to the "Road to Santa Ana" and to the southwest of the "Old House" within Section 12 of the Jacob Ross

parcel. Within the southern portion of the 180 acre parcel of James McFadden, an “Adobe house” is mapped within Township 5 South, Range 10 West, Section 1, south of Santiago Creek. The Las Bolsas Land Grant makes up the entirety of the portion of the General Plan area to the west of the Santa Ana River, and is noted as belonging to “Ramon Yorba et al.” The Las Bolsas Land Grant map does not identify any structures within the General Plan area, though a number of cottonwood trees are noted along the river.

Additional historic maps depict numerous segments of utility and transportation infrastructure as well established housing tracts around the time of the establishment of the City of Santa Ana. An irrigation map of the area from 1888 depicts a number of irrigation ditches within Santa Ana, including with the “Chapman Tract” (Figure 8). Two additional housing tracts are present within the General Plan area, including the “Williams Tract” and the “Ruffel and Fletcher Tract.” A segment of the SPRR is mapped traveling northwest-southeast through the core of the City of Santa Ana. Another railway labeled “Santa Ana, Fairview, and Newport Rail” travels roughly north from the southern boundary of the General Plan area into the core of the City without connecting to the SPRR. A number of features depicted as a small circle and labeled “A.W.” were mapped through the General Plan area, and may represent well features. The construction of the Santa Ana, Fairview, and Newport Rail was completed in 1891 and was a passenger rail line to connect downtown Santa Ana to the Newport Beach wharf (now Newport Pier) (Los Angeles Times 2015). The line became obsolete at the introduction of the Pacific Electric Line to the area. The General Plan area includes the original Santa Ana Red Line, and roughly follows the route of the Santa Ana, Fairview, and Newport Rail, though does not extend as far south (Figure 9).

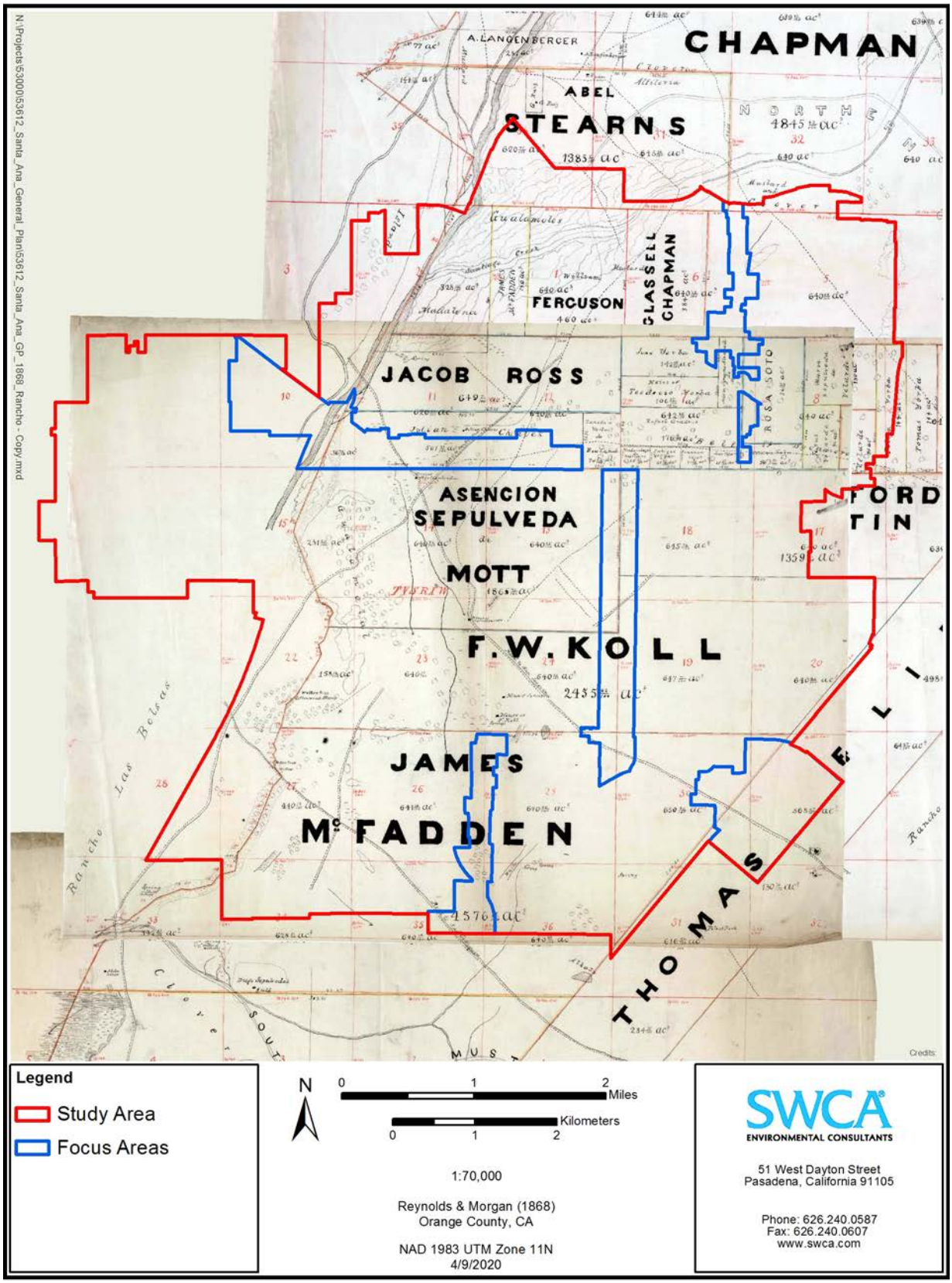

Figure 6. General Plan area plotted on the Rancho Santa Ana Land Grant, circa 1868.

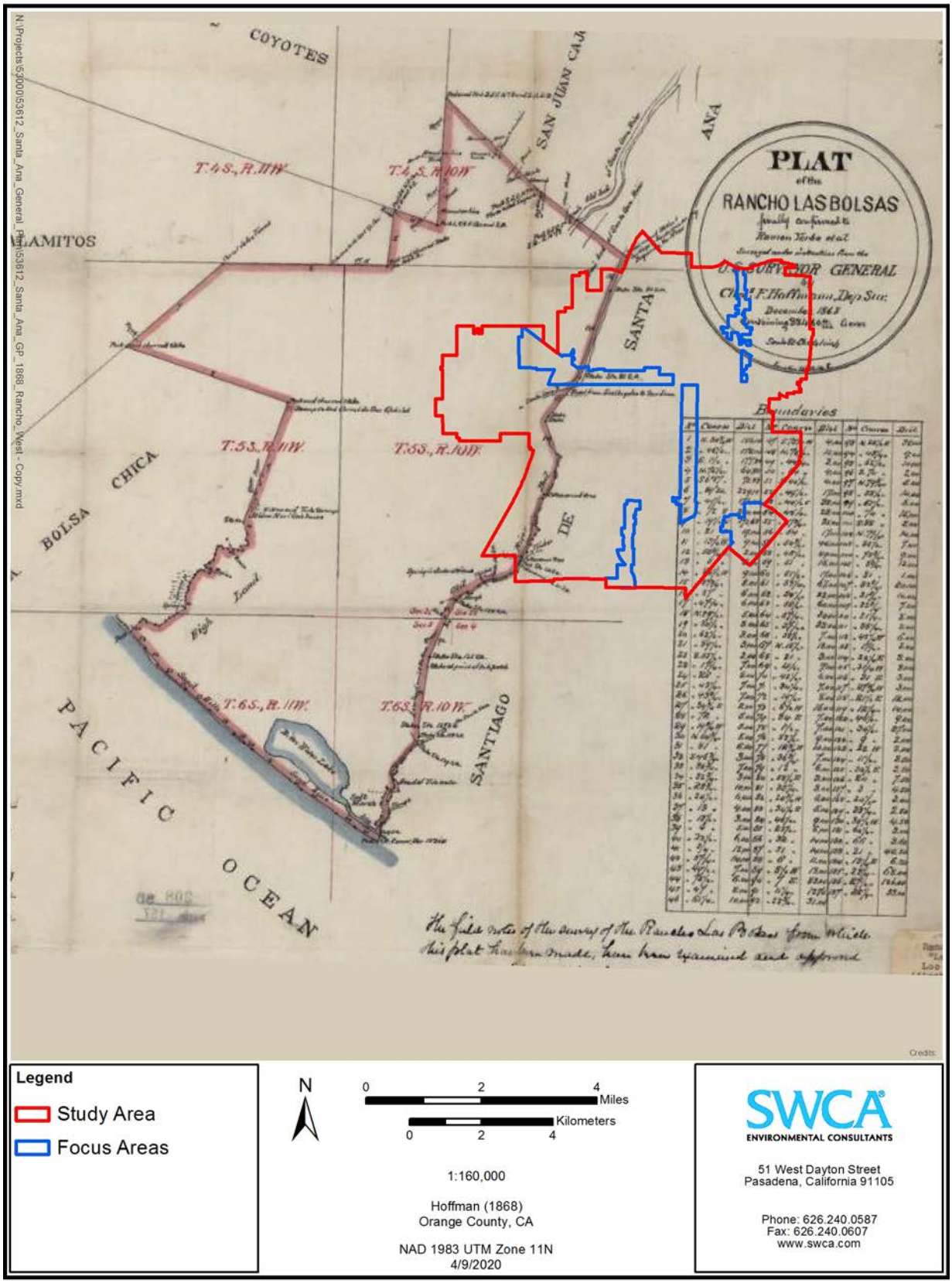

Figure 7. General Plan area plotted on the Rancho Las Bolsas Land Grant, circa 1868.

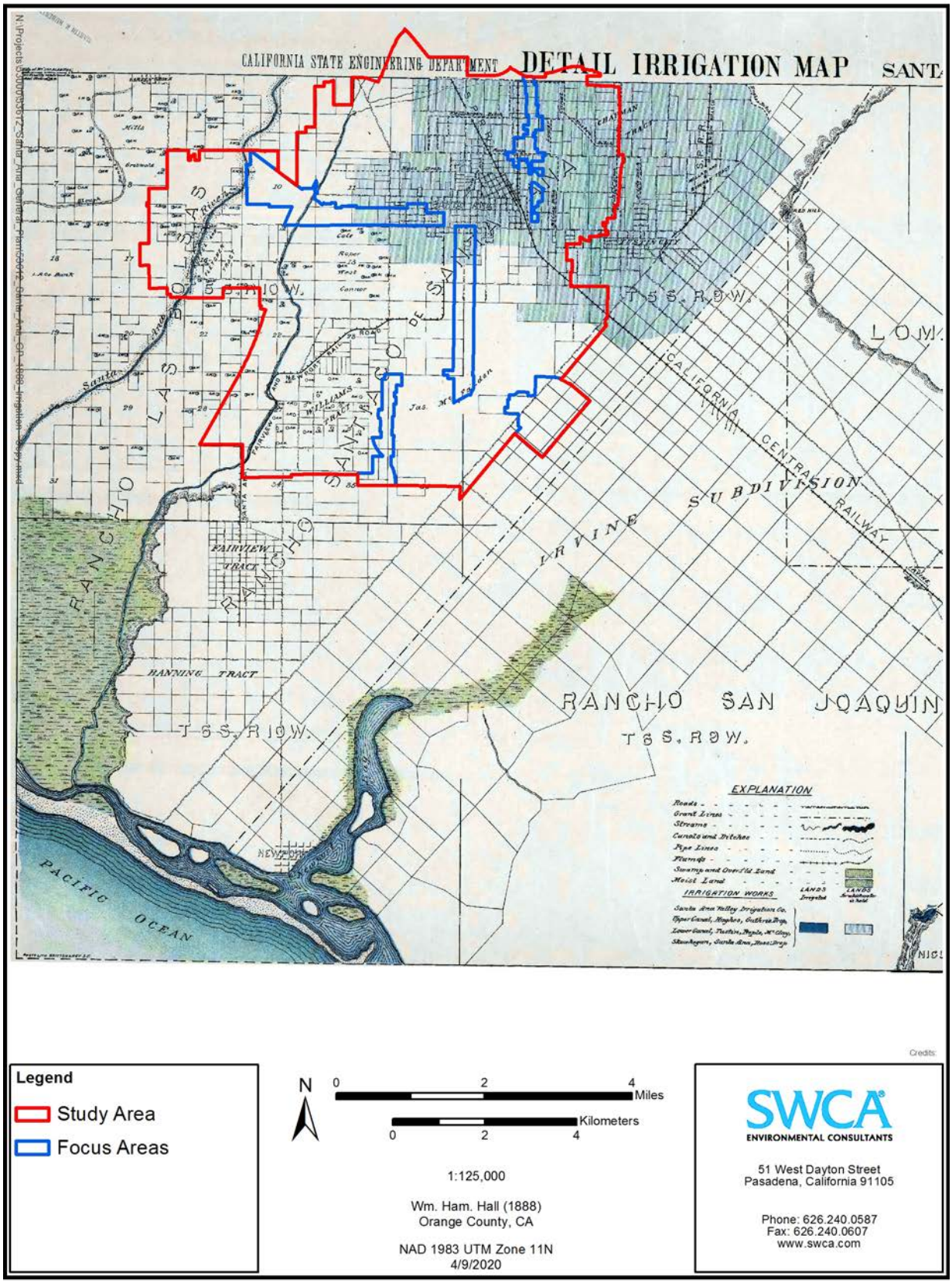

Figure 8. General Plan area plotted on Santa Ana irrigation map (Hall 1888).

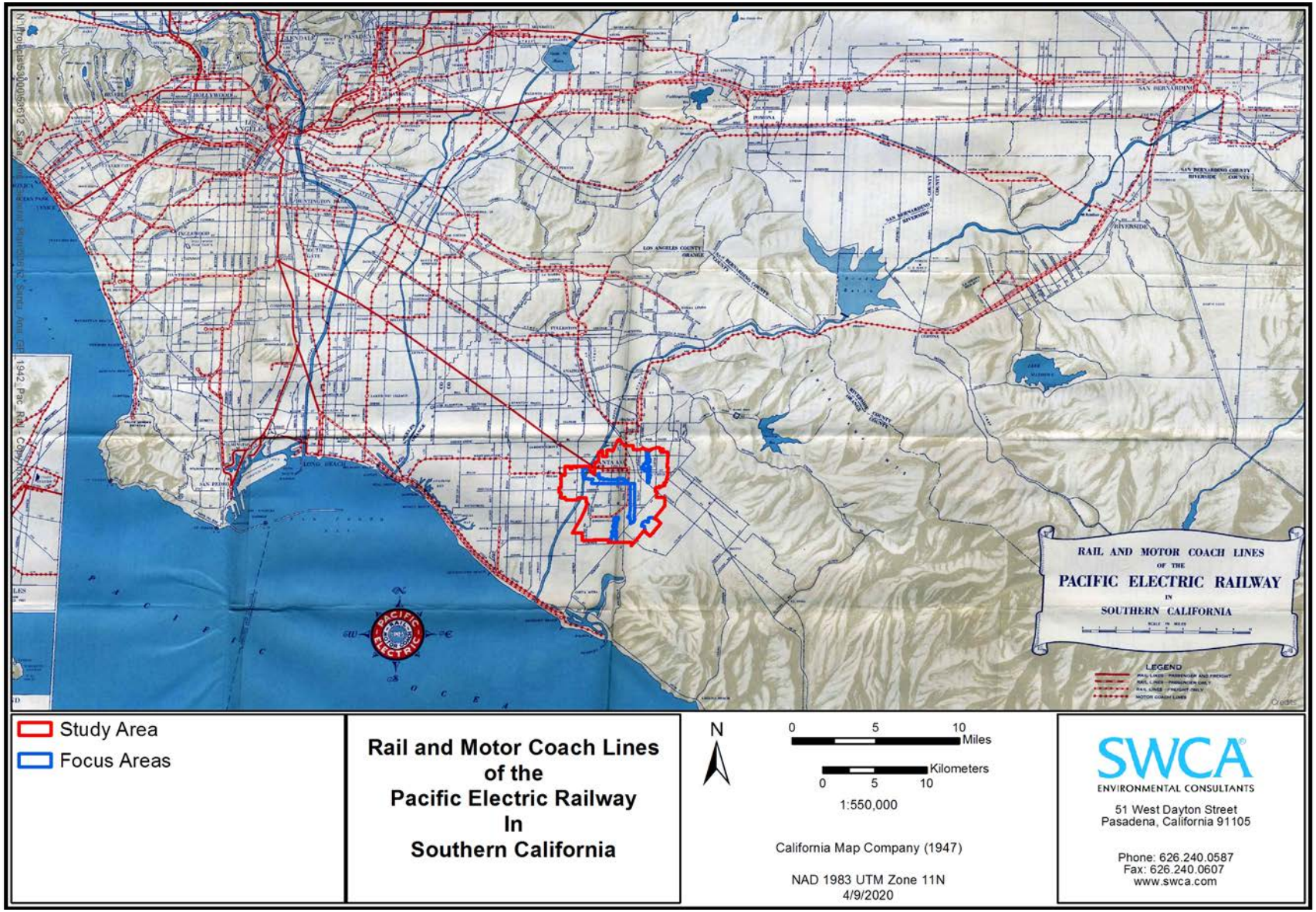

Figure 9. General Plan area plotted on the Southern California Pacific Electric Railway map (California Map Company 1947).

METHODS

This technical report is based on a desktop review of available literature, historic topographic maps, historic aerial photographs, and records and database searches containing information on archaeological and tribal cultural resources. Data sources include the California Historical Resources Information System, California State databases, and map searches encompassing the General Plan area to provide regional context, and ensure thorough review of potential archaeological and tribal cultural resources within the General Plan area.

The California OHP's system for managing information on archaeological and historic built environment resources and previous studies is known as the California Historical Resources Information System (CHRIS). The CHRIS records are administered through various Archaeological Information Centers responsible for one or more counties. Records for Orange County are managed through the South Central Coastal Information Center (SCCIC), located on the campus of California State University, Fullerton. On February 19, 2019, SWCA archaeologist Amber Johnson, B.A. conducted a records search of the CHRIS at the SCCIC. The search included any previously recorded archaeological resources within a 0.5-mile radius of the General Plan area. Historic built resources, or buildings, structures, and objects that are 45 years or older, were not included in the records search, as they are being addressed in a separate technical report. The results of the records search are presented below.

Additional Background Research

In addition to the CHRIS records search, SWCA conducted a review of all available historic USGS 7.5- and 15-minute quadrangle maps depicting the City of Santa Ana. SWCA also reviewed property-specific historical and ethnographic context research to identify information relevant to the General Plan Area. Archival research focused on a variety of primary and secondary materials relating to the history and development of the City of Santa Ana. Some of the sources consulted included historical maps, aerial and ground photographs, building permits, ethnographic reports, soil reports, and other environmental data.

NAHC Sacred Lands File Search

On February 22, 2019, SWCA requested a search of the Sacred Lands File (SLF) from the NAHC. On March 1, 2019, the NAHC provided the results of the SLF search, as well as a consultation list of tribal governments with traditional lands or cultural places located within the General Plan area. To assist with formal government-to-government consultation with NAHC-listed tribes pursuant to SB 18 and AB 52, this list will be provided to the City.

EXISTING CONDITIONS

Archaeological Resources

The CHRIS records search indicates that 23 archaeological resources were previously recorded within 0.5 mile (0.8 km) of the General Plan area. Of these resources, eight archaeological resources were located within the General Plan area; these include four prehistoric sites, one multicomponent site, and three historic isolates (Table 2). The prehistoric sites include habitation debris sites and lithic scatters. Site CA-ORA-300 (P-30-000300) was recorded in 1971 during the construction of an apartment complex, and the site components identified included five prehistoric burials, a prehistoric midden deposit, and some historic materials associated with a historic walnut grove and a historic residence. Site CA-ORA-301 (P-30-000301) was also recorded in 1971, and consisted of a subsurface lithic deposit, up to 6 feet (1.8 m) below the surface. The site is noted as being completely paved over. Site CA-ORA-353 (P-30-000353) was recorded in 1972, and is located adjacent to CA-ORA-300. The site was recorded as a prehistoric lithic scatter, and the area has been partially developed for housing. Site CA-ORA-392 (P-30-000392) was recorded in 1973 after the development of a housing project, with shell midden visible on the surface around the existing homes. The record notes that lithic artifacts were recovered by the local residents. None of these sites have been updated since their initial recordation, and it is possible that intact subsurface deposits are still present within the site boundaries. The area surrounding CA-ORA-300 and 353 should be considered particularly sensitive due to the previous discovery of Native American burials. Site CA-ORA-1514 (P-30-001514) was recorded in 1999 and consisted of a prehistoric shell scatter with no other associated artifacts. The site was noted to be a disturbed surface scatter in an open lot with buildings in the surrounding area, and no determination of a subsurface component. It is possible that intact subsurface deposits are still present within the site boundary.

While the review of these ethnographic and historic maps do not indicate the presence of any specific Native American archaeological resources, the proximity of mapped locations of these settlements in the vicinity of the General Plan indicate a high sensitivity. The presence of the Santa Ana River, a permanent water source that connects the closest mapped Native American villages, and numerous springs mapped throughout the area on the rancho plat maps indicates that there is likely a high sensitivity for Native American archaeological resources throughout the General Plan area. This is supported by the identification of several prehistoric sites composed of habitation debris and lithic materials. A number of historic features, including structures related to the ranchos, 19th century housing tracts, irrigation features, and heavy and light rail lines, are mapped within the General Plan area. While it is unlikely that some of those features are currently intact, remains of the structures and related subsurface components, such as refuse dumps, privies, etc., may still be present. The irrigation features that were decommissioned may have accumulated residential and commercial refuse prior to being filled in, a common practice observed archaeologically. For the decommissioned light rail features, segments of rail ties may still be intact beneath current road surfaces and remains of features related to the rail line, such as signal foundations, refuse deposits, and depot foundations, may still be present. While confirmation of the continued presence of the structures within the historic housing tracts was not conducted, it is likely that historic deposits related to the historic residences may still be present. Due to these factors, the overall sensitivity of the General Plan area for historic archaeological resources is high.

Table 2. Previously Recorded Cultural Resources within 0.5 mile (0.8 km) of the General Plan Area.

Primary No.	Trinomial	Temporal Affiliation	Resource Type	Resource Description	Recorded by and Year Recorded	Relationship to General Plan Area	NRHP/CRHR Eligibility
P-30-000300	CA-ORA-300H	Multicomponent	Site	Shell midden, lithic scatter, habitation debris, burials, historic refuse materials	Sperry, P. 1971	Within*	Unknown
P-30-000301	CA-ORA-301	Prehistoric	Site	Lithic scatter	Sperry, P. 1971	Within*	Unknown
P-30-000353	CA-ORA-353	Prehistoric	Site	Lithic scatter, habitation debris	Sperry, P. 1972	Within*	Unknown
P-30-000392	CA-ORA-392	Prehistoric	Site	Lithic scatter, habitation debris	Sperry, P. 1973	Within*	Unknown
P-30-001151	CA-ORA-1151H	Historic	Site	Historic refuse trash, walls, standing structures, hearths	Mason, V. 1987, 1988	Outside (within 0.5 mile)	Unknown
P-30-001510	CA-ORA-1510	Prehistoric	Site	Lithic scatter, cairns/rock feature, hearth/pit, habitation debris	King, G. 1999	Outside (within 0.5 mile)	Unknown
P-30-001514	CA-ORA-1514	Prehistoric	Site	Habitation debris (shell)	Duke, C., and Lopez, M. 1999	Within*	Unknown
P-30-001617	CA-ORA-1617	Prehistoric	Site	Habitation debris (shell)	McCormick, S. 2003	Outside (within 0.5 mile)	Unknown
P-30-001629	CA-ORA-1629H	Historic	Site	Historic refuse dump	Herman, R. 2003	Outside (within 0.5 mile)	Unknown
P-30-001725	CA-ORA-1725	Prehistoric	Site	Lithic scatter, caches	Aron, G. 2008	Outside (within 0.5 mile)	Unknown
P-30-001726	CA-ORA-1726H	Historic	Site	Historic refuse dump, well/cistern	Aron, G. 2013	Outside (within 0.5 mile)	Unknown
P-30-100192	-	Historic	Other	Isolated broken metal arrow-shaped object	Aron, G. 2013	Outside (within 0.5 mile)	Not Eligible
P-30-100193	-	Historic	Other	Isolated broken metal arrow-shaped object	Aron, G. 2013	Outside (within 0.5 mile)	Not Eligible
P-30-100194	-	Prehistoric	Other	Isolated bifacial mano	Armstrong, S. 2013	Outside (within 0.5 mile)	Not Eligible
P-30-100195	-	Prehistoric	Other	Isolated bifacial mano	Armstrong, S. 2013	Outside (within 0.5 mile)	Not Eligible
P-30-100196	-	Prehistoric	Other	Isolated bifacial mano (2 pieces)	Aron, G. 2013	Outside (within 0.5 mile)	Not Eligible
P-30-100199	-	Prehistoric	Other	Isolated metate fragment	Aron, G. 2013	Outside (within 0.5 mile)	Not Eligible
P-30-100200	-	Unknown	Other	Isolated metate fragment	Aron, G. 2013	Outside (within 0.5 mile)	Not Eligible

Primary No.	Trinomial	Temporal Affiliation	Resource Type	Resource Description	Recorded by and Year Recorded	Relationship to General Plan Area	NRHP/CRHR Eligibility
P-30-100337	-	Prehistoric	Other	Isolated unifacially flaked, grey limestone core	Sikes, N.E. 2003	Outside (within 0.5 mile)	Not Eligible
P-30-100341	-	Historic	Other	Isolated blue and white porcelain sherd	Hermann, R. 2003	Outside (within 0.5 mile)	Not Eligible
P-30-100342	-	Historic	Other	Two isolated ceramic sherds	Tennyson, M. 2002	Within*	Not Eligible
P-30-100343	-	Historic	Other	Isolated white ceramic sherd	Tennyson, M. 2002	Within*	Not Eligible
P-30-100344	-	Historic	Other	Isolated glass bottle	Tennyson, M. 2002	Within*	Not Eligible

*Within the General Plan Area but not within the Focus Areas.

Sacred Lands File Search

Tribal cultural resources can include archaeological sites, built environment resources, locations of events or ceremonies, resource procurement areas, and natural landscape features with special significance to one or more indigenous groups. SWCA received a response to the SLF search request by electronic mail from the NAHC on March 1, 2019. The SLF returned positive results, indicating that known tribal resources are located within the General Plan area. So that a meaningful consultation with interested Native American groups can be completed, this list will be forwarded to the City of Santa Ana, where all records of this consultation should be kept on file. Confidential Appendix C contains the list of tribal governments and SLF results.

POTENTIAL IMPACTS AND MITIGATION MEASURES

CEQA (Section 21084.1) requires that a lead agency determine whether a project may have a significant effect on cultural resources. Impacts to significant cultural resources that affect the characteristics of the resource that qualify it for the NRHP or adversely alter the significance of a resource listed on, or eligible for, the CRHR are considered a significant effect on the environment.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]).

Development of previously undeveloped areas, and redevelopment of previously developed areas have the potential to impact archaeological resources. Surface-level and subsurface archaeological sites and deposits can be affected by ground-disturbing activities associated with most types of construction.

Thresholds of Significance

The City of Santa Ana General Plan provides a framework within which future development projects can be considered. The potential for future proposed projects to result in impacts associated with cultural resources is based on the CEQA thresholds of significance outlined in Appendix G of the State CEQA Guidelines:

- Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?
- Would the project disturb any human remains, including those interred outside of formal cemeteries?
- Is the project site in or near an area containing known archaeological resources or containing features (drainage course, spring, knoll, rock outcroppings, or oak trees) that indicate potential archaeological sensitivity?

The purpose of this analysis is to identify any potential archaeological resources within or adjacent to the General Plan area, and to assist the lead agency in determining whether such resources meet the official definitions of archaeological and tribal cultural resources, as provided in the PRC, in particular CEQA.

Archaeological Resources

A significant prehistoric archaeological impact would occur if grading and construction activities result in a substantial adverse change to archaeological resources determined to be "unique" or "historic." "Unique" resources are defined in PRC Section 21083.2; "historic" resources are defined in PRC Section 21084.1 and CEQA Guidelines Section 15126.4.

PRC Section 21083.2(g) states:

> As used in this section, "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> A. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
>
> B. Has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
>
> C. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA Significance Criteria

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains the Initial Study Environmental Checklist, which includes questions relating to tribal and cultural resources. The issues presented in the Initial Study Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it would:

Archaeological Resources

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5;

- Disturb any human remains, including those interred outside of dedicated cemeteries (as explained in Section 9.0, Effects Found Not to Be Significant, further analysis of this topic is not required in this EIR).

Tribal Cultural Resources

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

Based on these standards/criteria, the effects of the proposed project have been categorized as either a "less than significant impact" or a "potentially significant impact." If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as

a significant and unavoidable impact. The standards used to evaluate the significance of impacts are often qualitative rather than quantitative because appropriate quantitative standards are either not available for many types of impacts or are not applicable for some types of projects.

Archaeological Resources

Under CEQA, archaeological resources may meet the definition of a historical resource or unique archaeological resource. Substantial adverse change to the significance of a historical resource is defined as physical demolition, destruction, alteration, or relocation of the resource or immediate surroundings such that its significance would be materially impaired. CEQA states that when a project would cause damage to a unique archaeological resource, reasonable efforts must be made to preserve the resource in place or leave it in an undisturbed state. Mitigation measures are required to the extent that the resource could be damaged or destroyed by a project. Implementation of the mitigation measures presented below would mitigate to the greatest extent feasible the potential for future projects to affect archaeological resources.

Individual and Cumulative Impacts to Archaeological Resources

Development involving ground disturbance within the General Plan area has the potential to impact known and unknown archaeological resources. Typically, surface-level and subsurface archaeological sites and deposits can be affected by ground-disturbing activities associated with most types of construction. Based on literature review and records searches, eight archaeological resources have been previously recorded within the General Plan area, including four prehistoric sites, one multicomponent site, and three historic isolates. The General Plan area includes many locations that would have been favorable for prehistoric Native American occupation. While most of the General Plan area has been developed over the course of the twentieth century, buried resources may remain in areas where developments such as parking lots, parks, or structures with shallow foundations have required only minimal ground disturbance. A review of historic and ethnographic maps indicates that is a moderate likelihood that intact subsurface archaeological resources would be encountered during redevelopment.

Archaeological resources impacts are site specific, but more intensive development can result in cumulative impacts on a regional level and should be considered in addition to individual project impacts on individual sites. A Phase I Cultural Resources Study would be required for all projects before ground disturbances and demolition activities are permitted to occur, as determined by the respective lead agency. The study would identify resources on the affected project sites that are, or appear to be, eligible for listing on the NRHP or CRHR. Such studies would also recommend mitigation measures to protect and preserve archaeological and tribal cultural resources.

As such, Mitigation Measures CUL-1 through CUL-4 (below) were developed to reduce potential individual and cumulative impacts associated with future development and redevelopment. Mitigation Measure CUL-1 requires an archaeological resources assessment be conducted for future development projects to identify any known archaeological resources and sensitivity of the site. Mitigation Measures CUL-2 through CUL-4 detail the next steps required should the archaeological resources assessment identify known resources or determine the site to have high or moderate resource sensitivity. Upon compliance with Mitigation Measures CUL-1 through CUL-4, individual and cumulative impacts to archaeological resources would be reduced to less than significant levels. +

- **CULTURAL RESOURCES MITIGATION MEASURE 1 (CUL-1)**

To ensure identification and preservation of archaeological resources and avoid significant impacts to those resources within the City of Santa Ana, all proposed projects shall be screened by the City to determine whether an Archaeological Resources Assessment study is required. Screening shall consider the type of project and whether ground disturbance will occur. Ground disturbance includes, but is not limited to, activities such as grading, excavation, trenching, boring, or demolition that extend below the current grade. If there will be no ground disturbance, then an Archaeological Resources Assessment shall not be required. If there will be ground disturbance, prior to issuance of any permits required to conduct ground disturbing activities, the City shall require an Archaeological Resources Assessment be conducted under the supervision of an archaeologist that meets the Secretary of the Interior's (SOI) Professionally Qualified Standards (PQS) in either prehistoric or historic archaeology.

Assessments shall include a CHRIS records search at the SCCIC and of the SLF maintained by the NAHC. The records searches will determine if the proposed project area has been previously surveyed for archaeological resources, identify and characterize the results of previous cultural resource surveys, and disclose any cultural resources that have been recorded and/or evaluated. If unpaved surfaces are present within the project area, and the entire project area has not been previously surveyed within the past 10 years, a Phase I pedestrian survey shall be undertaken in proposed project areas to locate any surface cultural materials that may be present. By performing a records search, consultation with the NAHC, and a Phase I survey, a qualified archaeologist will be able to classify the project area as having high, medium, or low sensitivity for archaeological resources.

- **CULTURAL RESOURCES MITIGATION MEASURE 2 (CUL-2)**

If potentially significant archaeological resources are identified through an archaeological resources assessment, and impacts to these resources cannot be avoided, a Phase II Testing and Evaluation investigation shall be performed by an archaeologist who meets the PQS prior to any construction-related ground-disturbing activities to determine significance. If resources determined significant or unique through Phase II testing, and site avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. These might include a Phase III data recovery program implemented by a qualified archaeologist and performed in accordance with the OHP's *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (OHP 1990) and *Guidelines for Archaeological Research Designs* (OHP 1991).

- **CULTURAL RESOURCES MITIGATION MEASURE 3 (CUL-3)**

If the archaeological assessment did not identify potentially significant archaeological resources within the proposed project area but indicated the area to be highly sensitive for archaeological resources, a qualified archaeologist shall monitor all ground-disturbing construction and pre-construction activities in areas with previously undisturbed soil. The archaeologist shall inform all construction personnel prior to construction activities of the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial on-site safety meeting, and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the resources are evaluated for significance by an archaeologist who meets the PQS and tribal consultation shall be conducted, in the case of a tribal resource.. If the discovery proves to be significant, the long-term disposition of any collected materials should be

determined in consultation with the affiliated tribe(s), where relevant; this could include curation with a recognized scientific or educational repository, transfer to the tribe, or respectful reinternment in an area designated by the tribe.

- **CULTURAL RESOURCES MITIGATION MEASURE 4 (CUL-4)**

If potentially significant archaeological resources are not identified through an Archaeological Resources Assessment but a project site is identified as having moderate sensitivity for archaeological resources (Mitigation Measure CUL-1), an archaeologist who meets the SOI PQS shall be retained on an on-call basis. The archaeologist shall inform all construction personnel prior to construction activities about the proper procedures in the event of an archaeological discovery. The pre-construction training shall be held in conjunction with the project's initial on-site safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity of the discovery shall be halted while the on-call archaeologist is contacted. The resource shall be evaluated for significance by an archaeologist who meets the SOI PQS, and tribal consultation shall be conducted, in the case of a tribal resource. If the discovery proves to be significant, the long-term disposition of any collected materials should be determined in consultation with the affiliated tribe(s), where relevant; this could include curation with a recognized scientific or educational repository, transfer to the tribe, or respectful reinternment in an area designated by the tribe.

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Appendix A

Native American Heritage Commission Sacred Lands Files Search Results

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